

PROJECT NUMBER: 1101
PROJECT TITLE: Entomological Research
PROJECT LEADER: D. L. Faustini
WRITTEN BY: S. Drew
PERIOD COVERED: September, 1988

I. PHYSIOLOGICAL STUDIES OF THE CIGARETTE BEETLE (CB)

A. METHOPRENE

1. Objective: To determine the most efficient use of the insect growth regulator (methoprene) within PM's CB control program.

Results: Reported on methoprene residues of Colombian cigarettes (1).

2. Objective: Bioassay stems and stem scraps to determine the optimum treatment levels and storage time.

Results: Obtained AESS bright stems and initiated base line bioassays (2).

Plans: Treat with methoprene and initiate treated bioassays.

3. Objective: Determine the sensitivity of the methoprene analysis conducted by Universal Leaf Tobacco (ULT).

Results: Methoprene was detected on only one the two methoprene treated samples. Sample J8CC was treated at 5.0 ppm, but only 4.3 ppm was detected. No methoprene was detected on sample E33K (concentration unknown)(3).

Plans: Submit more samples with methoprene concentrations between 1.0 and 5.0 ppm.

B. GLOBAL ECOLOGY

1. Objective: To determine the distribution and abundance of the CB as it relates to the processing of tobacco into cigarettes.

Results: Visited flue-cured stabilization warehouses to assess on-going monitoring program (4).

C. FLAVOR EXTRACT STUDY

1. Objective: To determine the attraction of certain flavor extracts to female adult cigarette beetles (CB).

Results: A 5.7% bright tobacco extract attracted 40 percent more mixed-sex CBs than the control (water extract) (5). This indicates that the olfactometer instrument is working satisfactorily.

2000832279

Plans: Test various flavor extracts for their specificity towards female CBs.

D. MICROCLIMATE STUDY

1. Objective: To determine the existence of microclimates within a warehouse and the effects of the microclimate on CB behavior.

Results: Late summer temperatures (August-September) within the warehouse and inside the hogsheads were stable. As expected the temperature change inside the hogsheads was slower. CB counts were too low to determine any affect (6).

Plans: Ongoing data collection.

E. MODIFIED ATMOSPHERES (MA)

1. Objective: Obtain APHIS approval for an Isolcell® modified atmosphere.

Results: Data for APHIS approval of a modified atmosphere have been generated and documented in a special report (7).

Plans: Use available data to obtain APHIS approval for Isolcell®. Continue to investigate MA and CB mortality with special interest on the controls.

F. SERVICE TO OTHERS

1. Objective: To conduct trials and provide technical services to areas outside R&D.

Results: Advised PM Australia on Cypermethrin® use (8) and assisted with phosphine fumigation at Commerce Rd. and Maury St. warehouses (9).

G. REFERENCES:

1. Ryan, L. Memo to H. Ganteaume. Methoprene Residues. September 1, 1988.
2. Lehman, R. Notebook No. 8519, pp. 97-98.
3. Drew, S. Notebook No. 7850, pp. 200.
4. Ryan, L. Letter to B. Harris. September 14, 1988.
5. Minor, M. Notebook No. 8539, pp. 53, 55.
6. Minor, M. Computer, RS1 File: Augtab. September 12, 1988.
7. Drew, S. Data and Analyses to Obtain APHIS Approval for Isolcell® Controlled Atmosphere Fumigations. September 16, 1988. Special Report (in review).

2000832280

8. Ryan, L. Memo to J. Wajutraub. Cypermethrin®. September 1, 1988.
9. Ryan, L. Notebook No. 8533, p. 13.

2000832281